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EXAMINER	
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2167	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/675,197	ARMITANO, ROBERT	
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/18/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Amendment filed 16 January 2007.

2. Claims 1-46 are pending in this application. Claims 1, 10, 11, 19, 24, 30, 34, 36 and 44 are independent. In the Amendment filed 16 January 2007, claims 36-46 have been added. This action is made Final.

3. The rejections of Claims 1-26 and 30-33 as being anticipated by US Patent No 5,870,754 to Dimitrova et al and claims 27-29, 34 and 35 as being unpatentable over US Patent No 5,870,754 to Dimitrova et al in view of US Patent No 6,674,769 to Viswanath have been maintained.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 18 October 2006 was filed after the mailing date of the Non-Final Rejection on 16 October 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 36-43 and 44-46** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission

amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps in claims 36 and 44 are: transmission of the content. In order to terminate transmission of the content or to continue transmission of the content, there must first be a step consisting of transmitting the content.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. The rejections of **claims 24-29 and 30-35** under 35 U.S.C. 101 have been withdrawn; the rejections of **claims 1-23** under 35 U.S.C. 101 have been maintained; and the rejections of **claims 36-46** (new claims) under 35 U.S.C. 101 have been added.

7. **Claims 1-23 and 34-46** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites a method for comparing a first content with a second content to determine whether the contents are identical, the method comprising the steps of: identifying a protocol encoding the first content and second content; computing a first signature of the first content and a second signature of the

second content; and comparing the first computed signature with the second signature to determine whether the first content is identical to the second content.

This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for comparing the first computed signature with the second signature to determine whether the first content is identical to the second content. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claims 2-9, which are dependent on claim 1 fail to overcome the rejection and therefore are rejected on the same grounds as claim 1.

Claim 10 recites a content comparator executing on a computer, the content comparator adapted to compare first content with a second content, the comparator comprising: a protocol identification module configured to identify a first protocol associated with the first content and a second protocol associated with the second content; a plurality of data segmentation modules configured to select a set of data segments from each of the first content and the second content; a plurality of signature computation modules configured to generate a first signature of the first content and a second signature of the second content;

and a signature comparison module configured to compare the first signature with the second signature.

Claim 10 recites a content comparator. The content comparator can comprise entirely of software per se according to one of ordinary skill in the art since it comprises of modules. Furthermore, Applicant's specification states on page 12, lines 18-20 that the content comparator can be implemented in software. Therefore, the content comparator can be considered to represent a computer program.

According to MPEP 2106.01 [R-5]:

> Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program's instructions, USPTO personnel should treat the claim as a process claim. See paragraph IV.B.2(b), below. When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim. See paragraph IV.B.2(a), below.

In this instance, the computer is executing the content comparator (computer program per se) and therefore the claim will be treated as a process claim.

This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract

in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for comparing a first signature to a second signature. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claim 11 recites an apparatus for comparing a first content with a second content, the apparatus comprising: means for identifying a protocol encoding the first content and the second content; means for selecting a set of data segments from the first content and the second content; means for computing a signature of the first content and a signature of the second content; and means for comparing the computed signature of the first content with the computed signature of the second content.

Claim 11 recites an apparatus. The apparatus (content comparator) can comprise entirely of software per se according to one of ordinary skill in the art. Furthermore, Applicant's specification states on page 12, lines 18-20 that the content comparator can be implemented in software. Therefore, since the apparatus fails to contain hardware, the system fails to fall within on of the statutory categories (Process, Machine, Manufacture, Composition of Matter and Improvements thereof).

Claims 12-18, which are dependent on claim 11 fail to overcome the rejection and therefore are rejected on the same grounds as claim 11.

Claim 19 recites a method to compare a first content with a second content in a network storage environment, the method comprising the steps of: receiving the first content; computing a signature of the first content; comparing

the computed signature of the first content with a signature of the second content; and identifying, if the computed signature of the first content matches the signature of the second content, that the first content is identical to the second content.

This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for identifying, if the computed signature of the first content matches the signature of the second content, that the first content is identical to the second content. The produced result of identifying that the first content is identical to the second content remains in the abstract and, thus, fails to achieve the required status of having real world value. Also, the method identifies that the first content is identical to the second content in the case that the computed signature of the first content matches the signature of the second content, however, the claim is silent in regards to what the result is if the first content signature fails to match the second content signature. Therefore, in the case that the signatures do not match, an infinite loop has been created.

Claims 20-23, which are dependent on claim 19 fail to overcome the rejection and therefore are rejected on the same grounds as claim 19.

Claim 36 recites a method, comprising: identifying a protocol encoding of a first content and a second content; identifying a first signature of the first content and a second signature of the second content, wherein each signature contains one or more protocol markers identifying the content; comparing one or more protocol markers within the first signature and the second signature to determine whether the first content is identical to the second content; and terminating transmission of the second content, if the first content and the second content are identical.

This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for terminating transmission of the second content, if the first content and the second content are identical. However, the result is only produced in the case where the first content and the second content are identical. The claim is silent in regards to what the result is if the first content signature fails to match the second content signature. Therefore, it is unclear what type of tangible result is produced in the case where the

content are not identical. Dependent claim 38 discloses the tangible result for the case in which the content is not identical.

Claims 37 and 39-43, which are dependent on claim 36 fail to overcome the rejection and therefore are rejected on the same grounds as claim 36.

Claim 44 recites a method, comprising: determining a protocol of a new content; computing a signature of the new content; comparing the computed signature of the new content with other content stored in a network cache to determine if the new content is identical to any the other content on the network cache; and terminating transmission of the new content, if the new content is identical any other content on the network cache.

This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result.

Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for terminating transmission of the new content, if the new content is identical to any the other content on the network cache. However, the result is only produced in the case where the content are identical. The claim is silent in regards to what the result is if the content is not identical. Therefore, it is unclear what type of tangible result is

produced in the case where the content are not identical. Dependent claim 45 discloses the tangible result for the case in which the new content is not identical.

Claim 46, which is dependent on claim 44 fails to overcome the rejection and therefore are rejected on the same grounds as claim 44.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-26 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No 5,870,754 to Dimitrova et al (hereafter Dimitrova et al).

Referring to claim 1, Dimitrova et al disclose a method for comparing a first content [video clips] with a second content [query video clip] to determine whether the contents are identical (see abstract), the method comprising the steps of:

identifying a protocol encoding the first content [video clip] and second content [query video clip] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

computing [generating] a first signature of the first content [video clip] and a second signature of the second content [video clip query] (see column 11, line 60 – column 12, line 30); and

comparing the first computed signature [database video clip signature] with the second signature [query video clip signature] to determine whether the first content [video clip] is identical to the second content [query video clip] (see column 8, lines 10-22 – "if the Hamming distance between two video clip signatures is small, then the similarity between the two video clip signatures is high;" therefore if the distance is zero then the video clips are identical).

Referring to claim 2, Dimitrova et al disclose the method of claim 1 further comprising the steps of:

selecting a first set of data segments [frames] from the first content and a second set of data segments [frames] from the second content (see column 5, lines 50-53); and

using the selected first set of data segments and the second set of data segments to compute [derive] the first signature and the second signature (see column 11, line 60 – column 12, line 30).

Referring to claim 3, Dimitrova et al disclose the method of claim 2 wherein the selected first set of data segments [frames] and second set of data segments [frames] comprise locations associated with one or more protocol markers [DC coefficients and motion vectors] (see column 5, lines 50-53 and column 7, lines 7-12).

Referring to claim 4, Dimitrova et al disclose the method of claim 1 wherein the step of computing the signature of the first content and the signature of the second content further comprises the steps of:

identifying one or more protocol markers [DC coefficients] associated with the first content [video clip] (see column 12, line 63 – column 13, line 20); and

identifying one or more protocol markers [DC coefficients] associated with the second content [query video clip] (see column 12, line 63 – column 13, line 20).

Referring to claim 5, Dimitrova et al disclose the method of claim 4 wherein the one or more protocol markers associated with the first content [video clip] comprises discrete cosine coefficients (see column 12, line 63 – column 13, line 20).

Referring to claim 6, Dimitrova et al disclose the method of claim 4 wherein the one or more protocol markers associated with the second content [query video clip] comprises discrete cosine coefficients (see column 12, line 63 – column 13, line 20).

Referring to claim 7, Dimitrova et al disclose the method of claim 4 wherein the one or more protocol markers associated with the first content [video clip] comprises motion vectors (see column 11, lines 21-22).

Referring to claim 8, Dimitrova et al disclose the method of claim 4 wherein the one or more protocol markers associated with the second content [query video clip] comprises motion vectors (see column 11, lines 21-22).

Referring to claim 9, Dimitrova et al disclose the method of claim 4 further comprising the steps of:

identifying a length [size of video clip in bytes and time length of video clip] of the first content [video clip] (see column 9, lines 44-50); and

identifying a length [size of video clip in bytes and time length of video clip] of the second content [query video clip] (see column 9, lines 44-50).

Referring to claim 10, Dimitrova et al disclose a content comparator executing on a computer, the content comparator adapted to compare first content with a second content (According to MPEP 2106 [R-3], the term "adapted to" is language that suggests or makes optional but does not require steps to be performed or does not limit the scope of the claim.), the comparator comprising:

a protocol identification module [software] (see column 9, lines 19-30) configured to identify a first protocol associated with the first content [video clip] and a second protocol associated with the second content [query video clip] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not

encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

a plurality of data segmentation modules [software] (see column 9, lines 19-30) configured to select a set of data segments [frames] from each of the first content [video clip] and the second content [query video clip] (see column 5, lines 50-53);

a plurality of signature computation modules [software] (see column 9, lines 19-30) configured to generate a first signature of the first content [video clip] and a second signature of the second content [query video clip] (see column 11, line 60 – column 12, line 30); and

a signature comparison module [software] (see column 9, lines 19-30) configured to compare the first signature [database video clip signature] with the second signature [query video clip signature] (see column 8, lines 10-22 – "if the Hamming distance between two video clip signatures is small, then the similarity between the two video clip signatures is high;" therefore if the distance is zero then the video clips are identical).

Referring to claim 11, Dimitrova et al disclose an apparatus for comparing a first content with a second content, the apparatus comprising:

means for identifying a protocol encoding the first content [video clip] and the second content [query video clip] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using

different encoding standard, is determined;" MPEG and JPEG are types of protocols);

means for selecting a set of data segments [frames] from the first content [video clip] and the second content [query video clip] (see column 5, lines 50-53);

means for computing [deriving] a first signature of the first content [video clip] and a second signature of the second content [query video clip] (see column 11, line 60 – column 12, line 30); and

means for comparing the computed signature of the first content [database video clip signature] with the computed signature of the second content [query video clip signature] (see column 8, lines 10-22 – "if the Hamming distance between two video clip signatures is small, then the similarity between the two video clip signatures is high;" therefore if the distance is zero then the video clips are identical).

Referring to claim 12, Dimitrova et al disclose the apparatus of claim 11 wherein the selected data segments [frames] comprises locations [window positions] associated with one or more protocol markers [DC coefficients and motion vectors] (see column 5, lines 50-53).

Referring to claim 13, Dimitrova et al disclose the method of claim 11 wherein the means for computing the signature of the first content and the signature of the second content further comprises the steps of:

means for identifying one or more protocol markers [DC coefficients] associated with the first content [video clip] (see column 12, line 63 – column 13, line 20); and

means for identifying one or more protocol markers [DC coefficients] associated with the second content [query video clip] (see column 12, line 63 – column 13, line 20).

Referring to claim 14, Dimitrova et al disclose the apparatus of claim 13 wherein the one or more protocol markers associated with the first content [video clip] comprises discrete cosine coefficients (see column 12, line 63 – column 13, line 20).

Referring to claim 15, Dimitrova et al disclose the apparatus of claim 13 wherein the one or more protocol markers associated with the second content [query video clip] comprises discrete cosine coefficients (see column 12, line 63 – column 13, line 20).

Referring to claim 16, Dimitrova et al disclose the apparatus of claim 13 wherein the one or more protocol markers associated with the first content [video clip] comprises motion vectors (see column 11, lines 21-22).

Referring to claim 17, Dimitrova et al disclose the apparatus of claim 13 wherein the one or more protocol markers associated with the second content [query video clip] comprises motion vectors (see column 11, lines 21-22).

Referring to claim 18, Dimitrova et al disclose the apparatus of claim 13 further comprising the steps of:

identifying a length [size of video clip in bytes and time length of video clip] of the first content [video clip] (see column 9, lines 44-50); and

identifying a length [size of video clip in bytes and time length of video clip] of the second content [query video clip] (see column 9, lines 44-50).

Referring to claim 19, Dimitrova et al disclose a method to compare a first content [query video clip] with a second content in a network storage environment (see column 8, lines 43-60), the method comprising the steps of:

receiving the first content [step 101] (see column 5, lines 36-38);

computing [generating] a signature of the first content (see column 11, line 60 – column 12, line 30);

comparing the computed signature of the first content [query video clip signature] with a signature of the second content [video clip signature] (see column 8, lines 10-22); and

identifying, if the computed signature of the first content matches the signature of the second content, that the first content is identical to the second content (see column 8, lines 10-22 – "if the Hamming distance between two video clip signatures is small, then the similarity between the two video clip signatures is high; therefore if the distance is zero then the video clips are identical).

Referring to claim 20, Dimitrova et al disclose the method of claim 19 wherein the step of computing the signature of the first further comprises the steps of:

identifying a set of protocol markers [DC coefficients] associated with the content (see column 12, line 63 – column 13, line 20); and

generating the signature from the identified set of protocol markers [DC coefficients] (see column 11, line 60 – column 12, line 30).

Referring to claim 21, Dimitrova et al disclose the method of claim 20 wherein the set of protocol markers further comprise a set of discrete cosine coefficients (see column 12, line 63 – column 13, line 20).

Referring to claim 22, Dimitrova et al disclose the method of claim 20 wherein the set of protocol markers further comprises one or more motion vectors (see column 11, lines 21-22).

Referring to claim 23, Dimitrova et al disclose the method of claim 19 wherein a size [size of video clip in bytes and time length of video clip] of the received content is utilized in creating the signature (see column 9, lines 44-50).

Referring to claim 24, Dimitrova et al disclose a method for identifying content using a protocol associated with the content as a signature, the method comprising the steps of:

determining the protocol associated with the content [video clips] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

identifying a set of markers associated with the protocol (see column 5, lines 18-27);

obtaining a set of markers [DC coefficients and motion vectors] from the content using the set of marker associated with the protocol (see column 5, lines 50-53); and

generating a signature of the content using the identified markers [DC coefficients] (see column 11, line 60 – column 12, line 30).

Referring to claim 25, Dimitrova et al disclose the method of claim 24 wherein the identified markers [DC coefficients and motion vectors] are within a subset [frames] of the entire content [video clip] (see column 5, lines 46-53).

Referring to claim 26, Dimitrova et al disclose the method of claim 24 wherein a size associated with the content is utilized to uniquely identify the content [video clips] (see column 9, lines 44-50).

Referring to claim 30, Dimitrova et al disclose a protocol marker identifier executing on computer for generating a signature of a content comprising:

a data segmentation module [software] (see column 9, lines 19-30) configured to select a set of data segments [frames] from the content [video clips] (see column 5, lines 50-53); and

a signature computation module [software] (see column 9, lines 19-30) configured to generate the signature from the set of data segments [frames] (see column 11, line 60 – column 12, line 30).

Referring to claim 31, Dimitrova et al disclose the protocol marker identifier of claim 30 further comprising a protocol identification module [software] (see column 9, lines 19-30) configured to identify a protocol associated with the content [video clips] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

Referring to claim 32, Dimitrova et al disclose the protocol marker identifier of claim 30 wherein the signature comprises a set of protocol markers [DC coefficients and motion vectors] (see column 5, lines 50-53).

Referring to claim 33, Dimitrova et al disclose the protocol marker identifier of claim 32 wherein the set of protocol markers comprises a set of discrete cosine transform coefficients (see column 5, lines 50-53 and column 12, line 63 – column 13, line 20).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,870,754 to Dimitrova et al as applied to claim 24 above, and further in view of US Patent No 6,674,769 to Viswanath (hereafter Viswanath).

Referring to claim 27, Dimitrova et al disclose a method for identifying content using a protocol associated with the content as a signature. However, Dimitrova et al fail to explicitly teach the further limitation wherein the signature is utilized in a network caching device to determine whether data should be forwarded from the network caching device. Viswanath discloses a method for

identifying content using signatures in a network that utilizes caching (see abstract), including the further limitation wherein the signature is utilized in a network caching device to determine whether data should be forwarded from the network caching device (see column 2, lines 56-64 – caching data) in order to increase the abilities of electronic systems to detect the presence of predefined objects.

It would have been obvious to one of ordinary skill at the time the invention was made to use the Viswanath's concept of network caching as a subcomponent to Dimitrova et al's method for identifying content using a protocol associated with the content as a signature. One would have been motivated to do so in order to increase the abilities of electronic systems to detect the presence of predefined objects.

Referring to claim 28, Dimitrova et al disclose a method for identifying content using a protocol associated with the content as a signature. However, Dimitrova et al fail to explicitly teach the further limitation wherein the signature is utilized to determine if a local copy of the content should be accessed. Viswanath discloses a method for identifying content using signatures in a network that utilizes caching (see abstract), including the further limitation wherein the signature is utilized to determine if a local copy of the content should be accessed (see column 6, lines 46-56 – accessing local copy) in order to increase the abilities of electronic systems to detect the presence of predefined objects.

It would have been obvious to one of ordinary skill at the time the invention was made to use the Viswanath's concept of accessing a local copy as a subcomponent to Dimitrova et al's method for identifying content using a protocol associated with the content as a signature. One would have been motivated to do so in order to increase the abilities of electronic systems to detect the presence of predefined objects.

Referring to claim 29, Dimitrova et al disclose a method for identifying content using a protocol associated with the content as a signature. However, Dimitrova et al fail to explicitly teach the further limitation wherein the signature is utilized to determine if a remote copy of the content should be accessed. Viswanath discloses a method for identifying content using signatures in a network that utilizes caching (see abstract), including the further limitation wherein the signature is utilized to determine if a remote copy of the content should be accessed (see column 6, lines 46-56 – accessing remote copy) in order to increase the abilities of electronic systems to detect the presence of predefined objects.

It would have been obvious to one of ordinary skill at the time the invention was made to use the Viswanath's concept of accessing a remote copy as a subcomponent to Dimitrova et al's method for identifying content using a protocol associated with the content as a signature. One would have been motivated to do so in order to increase the abilities of electronic systems to detect the presence of predefined objects.

12. Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,870,754 to Dimitrova et al in view of US Patent No 6,674,769 to Viswanath.

Referring to claim 34, Dimitrova et al disclose

means for determining a protocol of new contents [video clips] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

means for computing [generating] a signature of the content (see column 11, line 60 – column 12, line 30); and

means for comparing the computed signature [query video clip signature] of the new content with a signature of other content [video clip signature] (see column 8, lines 10-22).

However, Dimitrova et al fail to explicitly disclose the further limitation of a network caching device adapted to (According to MPEP 2106 [R-3], the term "adapted to" is language that suggests or makes optional but does not require steps to be performed or does not limit the scope of the claim.) utilize a signature associated with a protocol for caching decisions. Viswanath discloses a device for identifying content using signatures, including the further limitation wherein the device is a network caching device [policy cache 84] (see column 6, lines 46-56) in order to increase the efficiency of accessing data since a cache provides a memory area where frequently accessed data can be stored for rapid access.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the network caching device of Viswanath in place of the repository of Dimitrova et al. One would have been motivated to do so in order to increase the efficiency of accessing data since a cache provides a memory area where frequently accessed data can be stored for rapid access.

Referring to claim 35, the combination of Dimitrova et al and Viswanath discloses the network caching device of claim 34 wherein the means for computing a signature further comprises:

means for identifying a set of markers associated with the protocol associated with the content (Dimitrova et al: see column 5, lines 18-27); and

means for obtaining appropriate markers [DC coefficients and motion vectors] associated with the content (Dimitrova et al: see column 5, lines 50-53).

13. Claims 36-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 5,870,754 to Dimitrova et al in view of US Patent No 6,763,382 to Balakrishnan et al (hereafter Balakrishnan).

Referring to claim 36, Dimitrova discloses a method, comprising:

identifying a protocol encoding of a first content [video content] and a second content [query video clip] (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

identifying [extracting] a first signature of the first content [video clip] and a second signature of the second content [query video clip], wherein each signature contains one or more protocol markers [frame signatures comprise DC components and motion vector components] identifying the content (see column 3, lines 44-64 and column 5, lines 60-64); and

comparing one or more protocol markers within the first signature and the second signature [the two signatures are compared to one another and the signature consist of DC coefficients and motion vectors] (see column 5, lines 54-64 and column 7, lines 7-12) to determine whether the first content is identical to the second content (see column 6, lines 7-14).

However, Dimitrova et al fails to explicitly disclose the further limitation of terminating transmission of the second content, if the first content and the second content are identical. Balakrishnan discloses the retrieval of data in a network system (see abstract), including the further limitation of terminating transmission of the second content, if the first content and the second content are identical [according to page 14, lines 1-3 of applicant's specification, if such data is already stored in its cache, the network caching device may terminate the transmission and utilize the stored copy of the content – this is the only found citing of the step of terminating; if the data is located in the cache, then Balakrishnan retrieves the data from the cache instead of from the remote host system] (see column 4, lines 43-54 and column 5, lines 30-43) in order to reduce the drain on bandwidth and increases system performance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the concept of not transmitting a copy of the data to a client if there is already a local copy available as disclosed by Balakrishnan with the steps for determining if two contents are identical as disclosed by Dimitrova et al. One would have been motivated to do so in order to reduce the drain on bandwidth and increases system performance (Balakrishnan: see column 3, lines 40-61).

Referring to claim 37, the combination of Dimitrova and Balakrishnan (hereafter Dimitrova/Balakrishnan) discloses the method of claim 36, further comprising:

computing the first signature of the first content as the first content is converted from raw data to the protocol (Dimitrova: see column 9, lines 31-43); and

computing the second signature of the second content as the second content is converted from raw data to the protocol (Dimitrova: see column 9, lines 31-43).

Referring to claim 38, Dimitrova/Balakrishnan discloses the method of claim 36, further comprising: continuing transmission of the second content, if the first content and the second content are not identical (Balakrishnan: see column 4, lines 49-51).

Referring to claim 39, Dimitrova/Balakrishnan discloses the method of claim 36, wherein the one or more protocol markers associated with the first content comprises discrete cosine coefficients (Dimitrova: see column 12, line 63 – column 13, line 20).

Referring to claim 40, Dimitrova/Balakrishnan discloses the method of claim 36, wherein the one or more protocol markers associated with the second content comprises discrete cosine coefficients (Dimitrova: see column 12, line 63 – column 13, line 20).

Referring to claim 41, Dimitrova/Balakrishnan discloses the method of claim 36, wherein the one or more protocol markers associated with the first content comprises motion vectors (Dimitrova: see column 11, lines 21-22).

Referring to claim 42, Dimitrova/Balakrishnan discloses the method of claim 36, wherein the one or more protocol markers associated with the second content comprises motion vectors (Dimitrova: see column 11, lines 21-22).

Referring to claim 43, Dimitrova/Balakrishnan discloses the method of claim 36, further comprising:

identifying a length [size of video clip in bytes and time length of video clip] of the first content [video clip] (Dimitrova: see column 9, lines 44-50); and

identifying a length [size of video clip in bytes and time length of video clip] of the second content [query video clip] (Dimitrova: see column 9, lines 44-50).

Referring to claim 44, Dimitrova discloses a method, comprising:

determining a protocol of a new content (see column 5, lines 38-41 – "Then, in step 102, whether the video clip is at least partially encoded using the MPEG or the Motion JPEG encoding standard, is not encoded at all, or is encoded using different encoding standard, is determined;" MPEG and JPEG are types of protocols);

computing a signature of the new content (see column 3, lines 44-64 and column 5, lines 60-64); and

comparing the computed signature of the new content with other content stored in a network cache to determine if the new content is identical to any the other content on the network cache (see column 5, lines 54-64; column 6, lines 7-14 and column 7, lines 7-12).

However, Dimitrova et al fails to explicitly disclose the further limitation of terminating transmission of the new content, if the new content is identical any other content on the network cache. Balakrishnan discloses the retrieval of data in a network system (see abstract), including the further limitation of terminating transmission of the new content, if the new content is identical any other content on the network cache (see column 4, lines 43-54 and column 5, lines 30-43) in order to reduce the drain on bandwidth and increases system performance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the concept of not transmitting a copy of the data to a client if there is already a local copy available as disclosed by Balakrishnan with the steps for determining if two contents are identical as disclosed by Dimitrova et al. One would have been motivated to do so in order to reduce the drain on bandwidth and increases system performance (Balakrishnan: see column 3, lines 40-61).

Referring to claim 45, Dimitrova/Balakrishnan discloses the method of claim 44, further comprising:

continuing transmission of the new content, if the new content is not identical to any other content within the network cache (Balakrishnan: see column 4, lines 49-51).

Referring to claim 46, Dimitrova/Balakrishnan discloses the network caching device of claim 44 wherein the step of computing a signature further comprises:

identifying a set of markers associated with the protocol associated with the content (Dimitrova: see column 5, lines 54-64); and

obtaining appropriate markers associated with the content (Dimitrova: see column 5, lines 54-64).

Response to Arguments

14. Applicant's arguments filed in regards to the U.S.C. 101 rejection of claims 1-23 have been fully considered but they are not persuasive. In the arguments on page 5, applicant states: Applicant's claimed invention produces a result of comparing markers within a signature of a first content and second content to determine if they are identical. However, this result remains in the abstract and, thus, fails to achieve the required status of having real world value.

15. In regards to applicant's arguments on page 12 concerning the prior art rejection of claims 1-26 and 30-33, the applicant states: Applicant respectfully urges that Dimitrova does not teach nor suggest Applicant's novel step of comparing the first computed signature with the second signature to determine whether the first content is identical to the second content. In further detail, in

Applicant's claimed invention, Applicant compares the markers in previously generated signatures. Applicant's invention uses the markers generated during processing of the data to compare whether a first and second content are identical. Applicant's invention allows the markers to be transferred for comparison instead of all the data for bit comparison or distance comparison as in Dimitrova. Dimitrova discloses comparing the distances of each video clip to find the most similar. Dimitrova requires an extra computation using all the data to determine the most similar video clip. Dimitrova is not comparing the protocol but a calculated distance between frames. Applicant's invention claims comparing the first computed signature with the second signature to determine whether the first content is identical to the second content, where the first signature and the second signatures are based on a protocol encoding identified in the first element of the claim.

The examiner respectfully disagrees.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., compares the markers in previously generated signatures and uses the markers generated during processing of the data to compare whether a first and second content are identical) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claim language of the independent claim merely states that "computing a first signature of the first

content and a second signature of the second content and comparing the first computed signature with the second signature to determine whether the first content is identical to the second." The claim language fails to explicitly mention the generation of markers during the processing of data. Furthermore, page 12, lines 9-11 states "The signature computation module 415 uses the delivered content segments to generate a signature of the content. Illustratively, such a signature may be computed by analyzing the content and identifying appropriate protocol markers." Therefore, a signature is not explicitly defined in the specification as consisting of protocol markers.

16. In regards to the argument "Applicant's invention claims comparing the first computed signature with the second signature to determine whether the first content is identical to the second content, where the first signature and the second signatures are based on a protocol encoding identified in the first element of the claim," Dimitrova also teaches this concept. Dimitrova determines the similarity between two signatures (see column 8, lines 10-22). The concept of two signatures being a hundred percent identical is considered to be analogous to the concept of being identical since in order to be a hundred percent similar the two signatures would have to be identical. Furthermore, the first and second signatures of Dimitrova are calculated based on the concatenation of DC+M signatures of each frame of the content (see column 5, lines 54-64). The DC+M signatures are based on the DC coefficients and the motion vectors.

17. In regards to applicant's arguments on page 14 concerning the prior art rejection of claims 34-35, applicant states: Applicant respectfully urges that

Dimitrova and Viswanath taken alone or in combination do not teach or disclose Applicant's claimed novel means for comparing the computed signature of the new content with a signature of the other content.

The Examiner respectfully disagrees for the same reasons as discussed previously concerning claims 1-26 and 30-33.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

12 April 2007
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